Pioneer sound.vision.soul

Service Manual

ORDER NO.
CRT3841

BRIDGEABLE TWO-CHANNEL POWER AMPLIFIER

GM-5300T/XU/UC
GM-5300T/XU/EW5
GM-5300T/XU/ES
GM-5300T/XU/CN5

This service manual should be used together with the following manual(s) listed below. For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
GM-520T/XU/UC	CRT3519		

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2006**

K-ZZA. NOV. 2006 Printed in Japan

SAFETY INFORMATION

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 6)

PACKING SECTION PARTS LIST

*:Non spare part

Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/UC
	5	Protector	CHP3066	Not used
	7	Carton	CHG5587	YHG5133
	8	Contain Box	CHL5587	YHL5133
	9-2	Owner's Manual	CRD4010	YRD5096
*	9-4	Caution Card	CRP1324	Not used
*	9-5	Caution Card	CRP1337	YRP5004
	10	Protector	Not used	YHP5020
	11	Protector	Not used	YHP5021

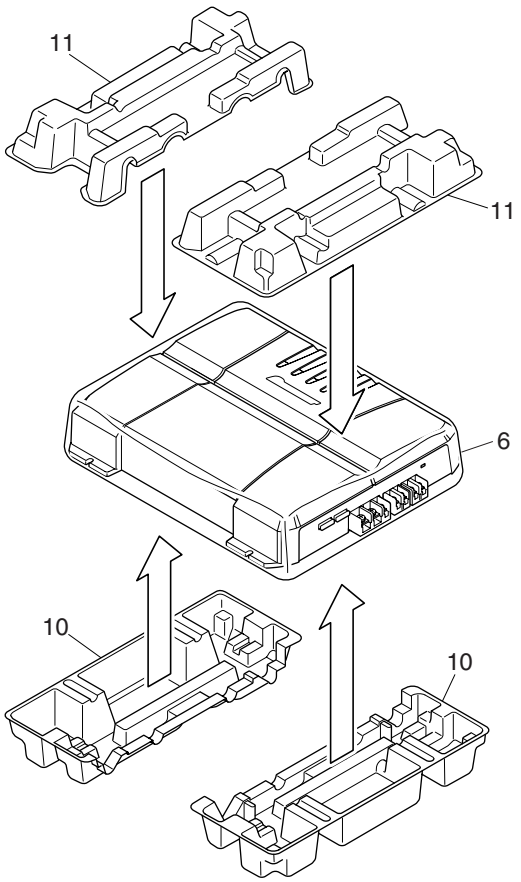
Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/EW5
	5	Protector	CHP3066	Not used
	6	Polyethylene Bag	CEG1351	CEG1317
	7	Carton	CHG5587	YHG5132
	8	Contain Box	CHL5587	YHL5132
	9-2	Owner's Manual	CRD4010	YRD5095
*	9-3	Card	ARY1048	Not used
*	9-4	Caution Card	CRP1324	Not used
*	9-5	Caution Card	CRP1337	YRP5004
*	9-6	Warranty Card	Not used	CRY1157
	10	Protector	Not used	YHP5020
	11	Protector	Not used	YHP5021

Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/ES
	5	Protector	CHP3066	Not used
	6	Polyethylene Bag	CEG1351	CEG1317
	7	Carton	CHG5587	YHG5131
	8	Contain Box	CHL5587	YHL5131
	9-2	Owner's Manual	CRD4010	YRD5093
*	9-3	Card	ARY1048	Not used
*	9-4	Caution Card	CRP1324	Not used
*	9-5	Caution Card	CRP1337	YRP5004
	9-7	Owner's Manual	Not used	YRD5094
	10	Protector	Not used	YHP5020
	11	Protector	Not used	YHP5021

Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/CN5
	5	Protector	CHP3066	Not used
	6	Polyethylene Bag	CEG1351	CEG1317
	7	Carton	CHG5587	YHG5130
	8	Contain Box	CHL5587	YHL5130
	9-2	Owner's Manual	CRD4010	YRB5039
*	9-3	Card	ARY1048	Not used
*	9-4	Caution Card	CRP1324	Not used
*	9-5	Caution Card	CRP1337	YRP5004
*	9-6	Warranty Card	Not used	ARY7046
	10	Protector	Not used	YHP5020
	11	Protector	Not used	YHP5021

Owner's Manual

Part No.	Language
YRD5096	English, French, Spanish
YRD5095	English, Spanish, German, French, Italian, Dutch, Russian
YRD5093	English, Spanish
YRD5094	Portuguese(B), Arabic
YRB5039	Simplified Chinese

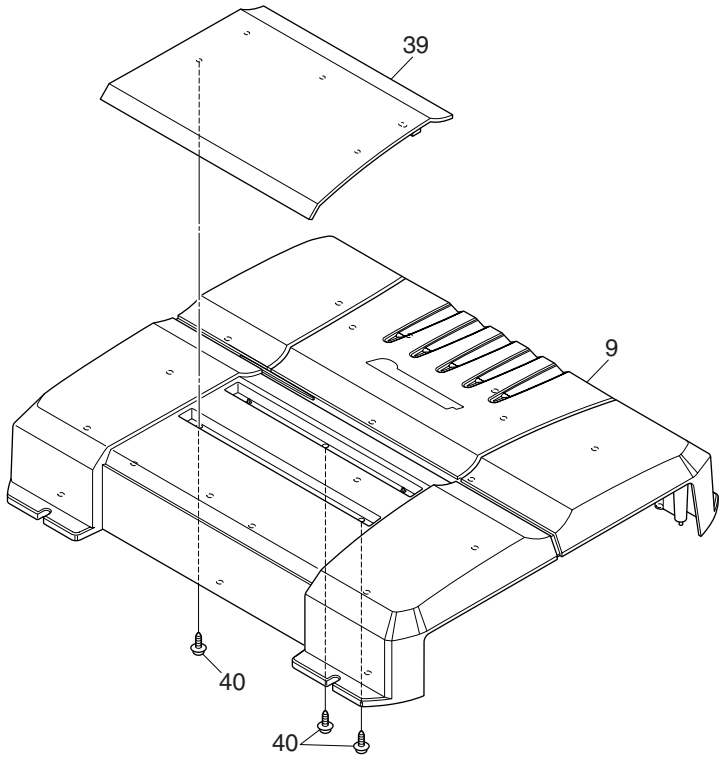


EXTERIOR(Page 8)

EXTERIOR SECTION PARTS LIST

Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/UC GM-5300T/XU/ES GM-5300T/XU/CN5
*	4	Badge	CAH1946	YAH5033
	6	Case	CNB3199	YNB5019
	7	Panel	CNB3312	YNB5027
	9	Heat Sink	CNR1828	YNR5036
	11	Lighting Conductor	CNV8692	YNV5091
	12	Amp Unit	CWH1325	YWH5017
	15	Terminal (CN853)	CKE1055	YKE5008
	16	Terminal (CN855)	CKE1057	YKE5010
	17	Terminal (CN856)	CKE1057	YKE5010
	27	Sub Heat Sink	CNR1808	YNR5050
	28	Sub Heat Sink	CNR1810	YNR5051
	34	Screw	BMZ40P200FTB	Not used
*	35	Seal	CAN3984	Not used
	36	Holder	CNV8522	Not used
	37	Nut	NB40FTB	Not used
	38	Washer	WB40FTB	Not used
	39	Cover	Not used	YNR5040
	40	Screw	Not used	IBZ30P100FTC

Mark	No.	Description	GM-520T/XU/UC	GM-5300T/XU/EW5
*	4	Badge	CAH1946	YAH5033
	6	Case	CNB3199	YNB5019
	7	Panel	CNB3312	YNB5027
	9	Heat Sink	CNR1828	YNR5036
	11	Lighting Conductor	CNV8692	YNV5091
	12	Amp Unit	CWH1325	YWH5017
	15	Terminal (CN853)	CKE1055	YKE5008
	16	Terminal (CN855)	CKE1057	YKE5010
	17	Terminal (CN856)	CKE1057	YKE5010
	27	Sub Heat Sink	CNR1808	YNR5050
	28	Sub Heat Sink	CNR1810	YNR5051
	34	Screw	BMZ40P200FTB	Not used
*	35	Seal	CAN3984	Not used
	36	Holder	CNV8522	Not used
	37	Nut	NB40FTB	Not used
	38	Washer	WB40FTB	Not used
	39	Cover	Not used	YNR5041
	40	Screw	Not used	IBZ30P100FTC

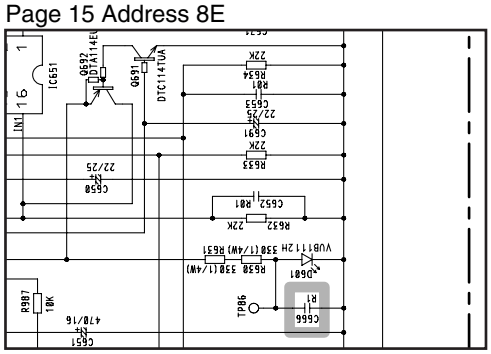


ELECTRICAL PARTS LIST(Page 20)

AMP UNIT

Circuit Symbol and No.	Part Name	GM-520T/XU/UC	GM-5300T/XU/UC GM-5300T/XU/EW5 GM-5300T/XU/ES GM-5300T/XU/CN5
Q203	Transistor	DTA124EU	DTA124EUA
Q691	Transistor	DTC114TU	DTC114TUA
Q692	Transistor	DTA114EU	DTA114EUA
Q992	Transistor	DTC114TU	DTC114TUA
D601	LED	FR1112H	VUB1112H-4B63B
L601	Choke Coil 50 µH	CTH1323	CTH1341
R630		RD1/4PU271J	RD1/4PU331J
R631		RD1/4PU471J	RD1/4PU331J
C666		Not used	CKSQYB104K50

Page 15 Address 8E



Pioneer *sound.vision.soul*

Service Manual

GM-520T/XU/UC

ORDER NO.
CRT3519

BRIDGEABLE TWO-CHANNEL POWER AMPLIFIER

GM-520T /XU/UC

For details, refer to "Important Check Points for Good Servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2005**

K-ZZA. AUG. 2005 Printed in Japan

SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

● **Service Precaution**

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION 2
1. SPECIFICATIONS 5
2. EXPLODED VIEWS AND PARTS LIST 6
2.1 PACKING 6
2.2 EXTERIOR 8
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM 10
3.1 SCHEMATIC DIAGRAM(GUIDE PAGE) 10
4. PCB CONNECTION DIAGRAM 16
4.1 AMP UNIT 16
5. ELECTRICAL PARTS LIST 20
6. ADJUSTMENT 24
7. GENERAL INFORMATION 25
7.1 DIAGNOSIS 25
7.1.1 DISASSEMBLY 25
7.1.2 CONNECTOR FUNCTION DESCRIPTION 26
8. OPERATIONS 27

1. SPECIFICATIONS

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	30.0 A (at continuous power, 4 Ω)
Backup current	**3 mA or less**
Average current drawn*	10.0 A (4 Ω for two channels)
	19.0 A (4 Ω for one channel)
Fuse	30 A × 2
Dimensions	300 (W) × 61 (H) × 336 (D) mm
	[12 in. (W) × 2-3/8 in. (H) × 1ft. 1 in. (D)]
Weight	3.9 kg (8.6 lbs.) (Leads for wiring not included)
Maximum power output	250 W × 2 (4 Ω) / 760 W × 1 (4 Ω)
Continuous power output	125 W × 2 (at 14.4 V, 4 Ω, 20 Hz — 20 kHz 0.2% THD)
	380 W × 1 (at 14.4 V, 4 Ω, 20 Hz — 20 kHz 0.8% THD)
	190 W × 2 (at 14.4 V, 2 Ω, 20 Hz — 20 kHz 0.8% THD)
Load impedance	4 Ω (2 — 8 Ω allowable)
	(Bridge connection: 4 — 8 Ω allowable)
Frequency response	10 Hz — 50 kHz (+0 dB, –1 dB)
Signal-to-noise ratio	95 dB (IHF-A network)
Distortion	0.015 % (10 W, 1 kHz)
Separation	70 dB (1 kHz)
Low pass filter	Cut off frequency: 80 Hz
	Cut off slope: –12 dB/oct
Bass boost	Frequency: 50 Hz
	Level: 0/6/12 dB
Gain control	RCA: 200 mV — 6.5 V
	Speaker: 0.8 — 26 V
Maximum input level / impedance	RCA: 6.5 V / 22 kΩ
	Speaker: 26 V / 40 kΩ

Power output	125 W RMS × 2 channels
	(4 Ω and ≦1 % THD+N)
	380 W RMS × 1 channel
	(4 Ω and ≦1 % THD+N)
	190 W RMS × 2 channels
	(2 Ω and ≦1 % THD+N)
Signal-to-noise ratio	75 dBA (Reference: 1 W into 4 Ω)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

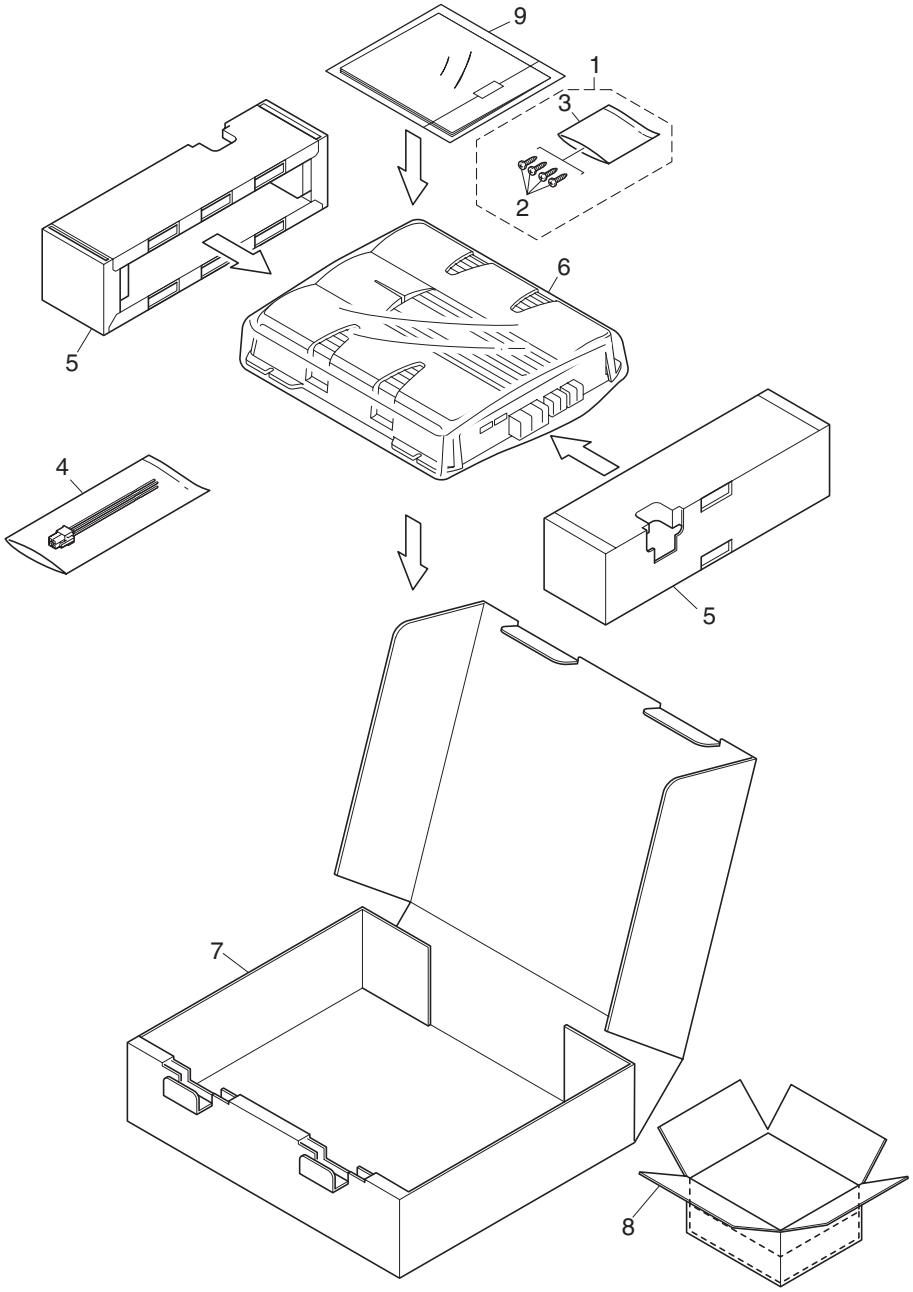
***Average current drawn**

- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

2. EXPLODED VIEWS AND PARTS LIST

*NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
• Screw adjacent to▽mark on the product are used for disassembly.
• For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions,apply as you think it appropriate.)

2.1 PACKING



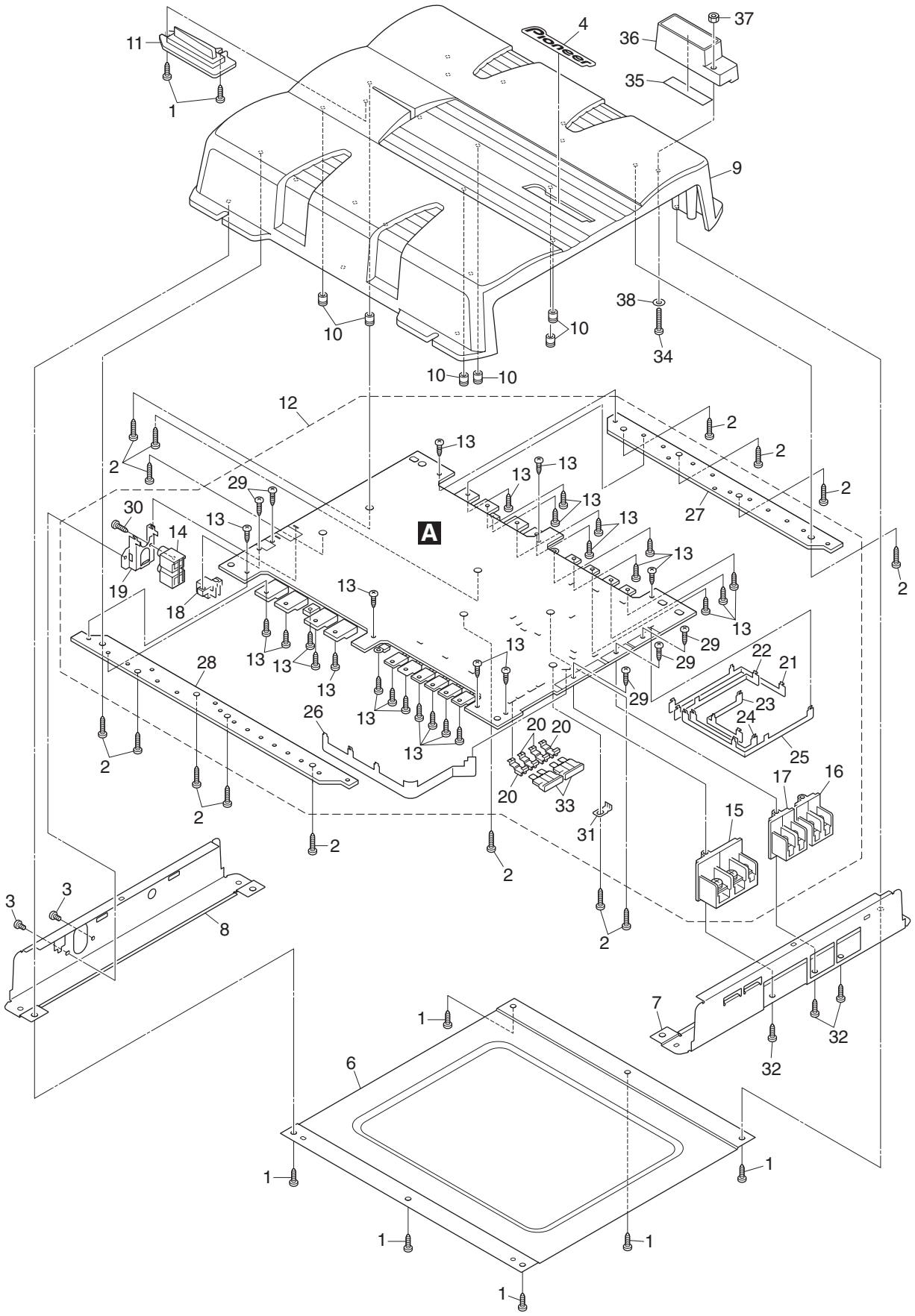
PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw Assy	CEA5330
	2	Screw	BYC40P180FTB
*	3	Polyethylene Sheet	CNM4338
	4	Cord Assy	CDE7736
	5	Protector	CHP3066
	6	Polyethylene Bag	CEG1351
	7	Carton	CHG5587
	8	Contain Box	CHL5587
	9-1	Polyethylene Bag	CEG1116
	9-2	Owner's Manual	CRD4010
*	9-3	Card	ARY1048
*	9-4	Caution Card	CRP1324

Owner's Manual

Part No.	Language
CRD4010	English, French, Spanish

2.2 EXTERIOR



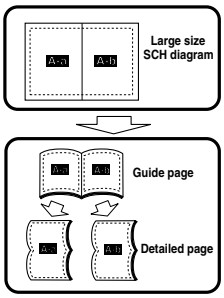
EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw(M3x8)	CBA2011
	2	Screw(M3x12)	CBA2012
	3	Screw	BSZ30P050FTB
*	4	Badge	CAH1946
	5	•••••	
	6	Case	CNB3199
	7	Panel	CNB3202
	8	Panel	CNB3206
	9	Heat Sink	CNR1828
	10	Spacer	CNV8256
	11	Lighting Conductor	CNV8692
	12	Amp Unit	CWH1287
	13	Screw(M3x8)	CBA2011
	14	Pin Jack (CN111)	CKB1068
	15	Terminal (CN853)	CKE1055
	16	Terminal (CN855)	CKE1057
	17	Terminal (CN856)	CKE1057
	18	Socket (CN801)	CKM1463
	19	Holder	CND2456
	20	Terminal	CND2458
	21	Buss Bar	CND2467
	22	Buss Bar	CND2468
	23	Buss Bar	CND2469
	24	Buss Bar	CND2470
	25	Buss Bar	CND2472
	26	Buss Bar	CND2729
	27	Sub Heat Sink	CNR1808
	28	Sub Heat Sink	CNR1810
	29	Screw	PPZ30P100FSN
	30	Screw	PPZ30P100FTB
	31	Terminal (CN850)	VNF1084
	32	Screw	PPZ30P100FTB
⚠	33	Fuse (FU100, FU101) (30A)	CEK1330
	34	Screw	BMZ40P200FTB
*	35	Seal	CAN3984
	36	Holder	CNV8522
	37	Nut	NB40FTB
	38	Washer	WB40FTB

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 SCHEMATIC DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

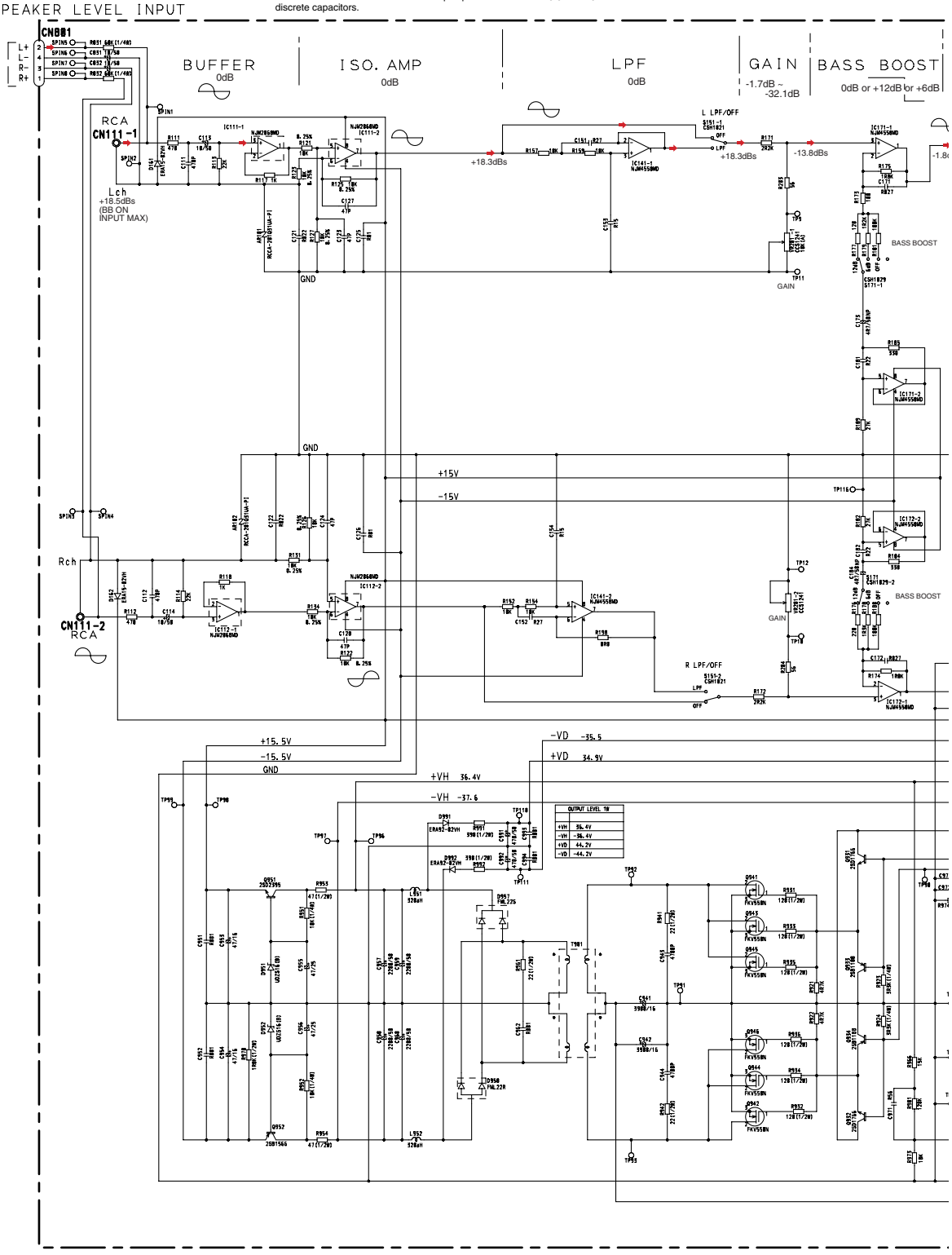
NOTE :

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

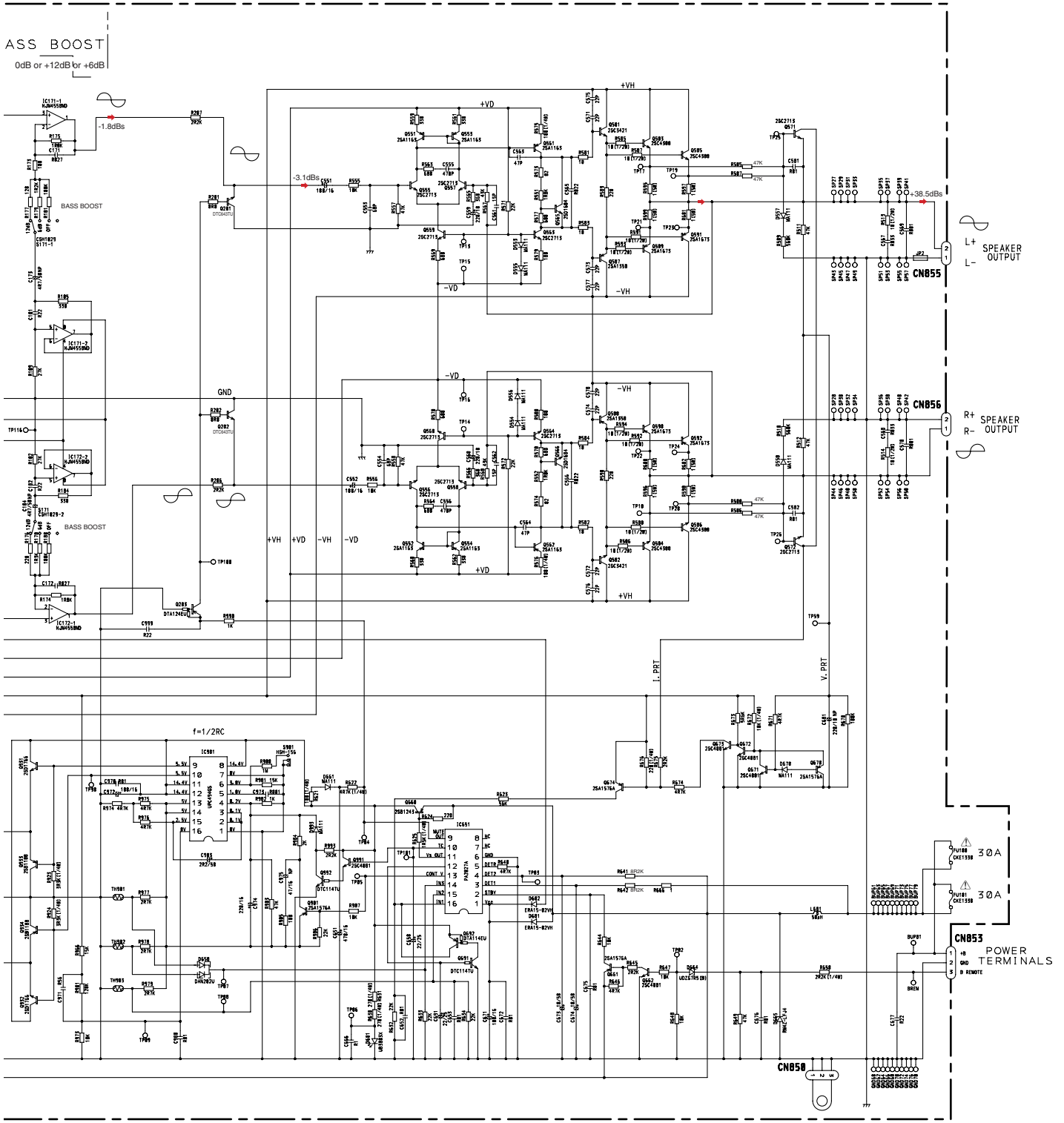
SPEAKER LEVEL INPUT

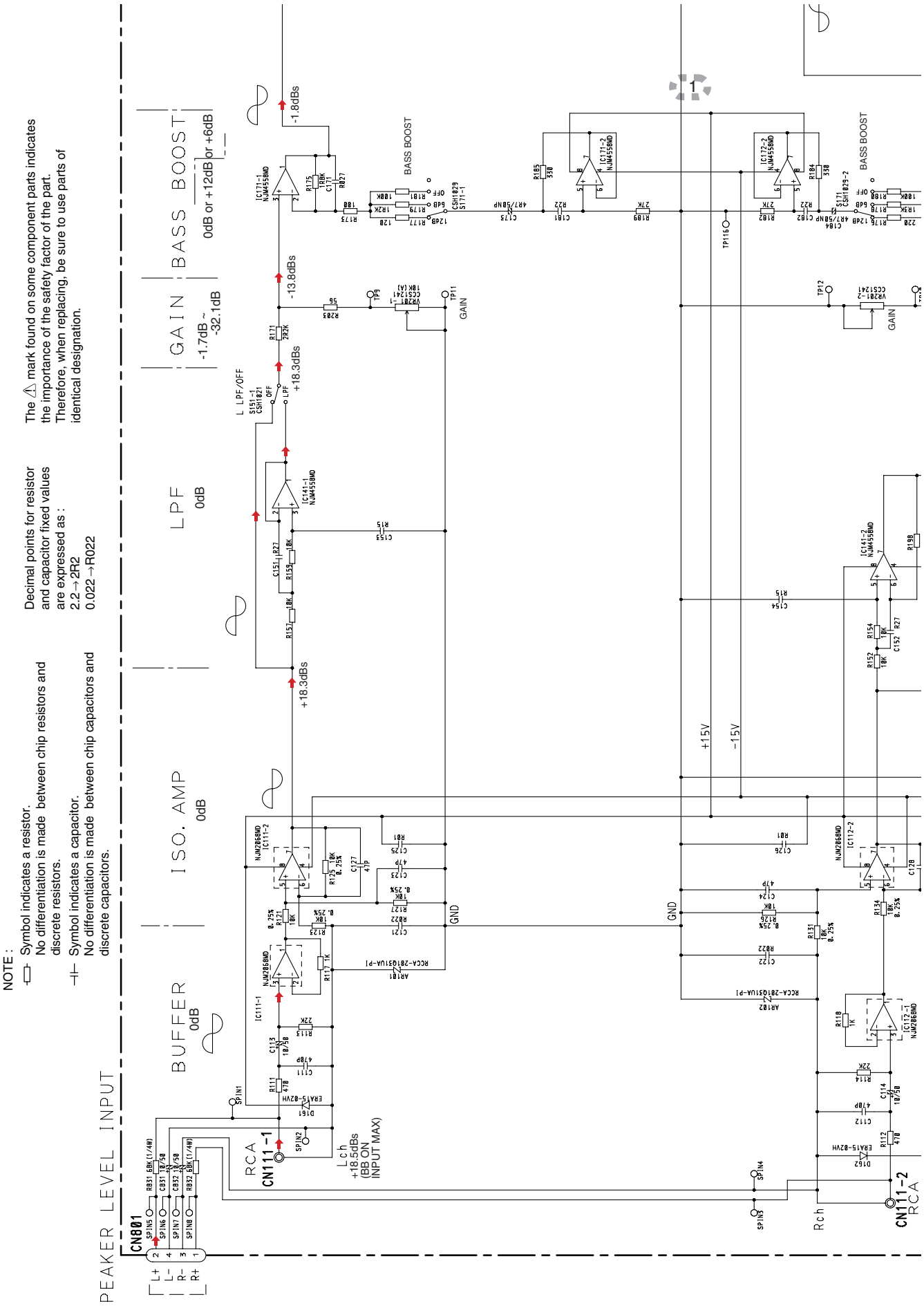


A-b

omponent parts indicates
ctor of the part.
sure to use parts of

A AMP UNIT



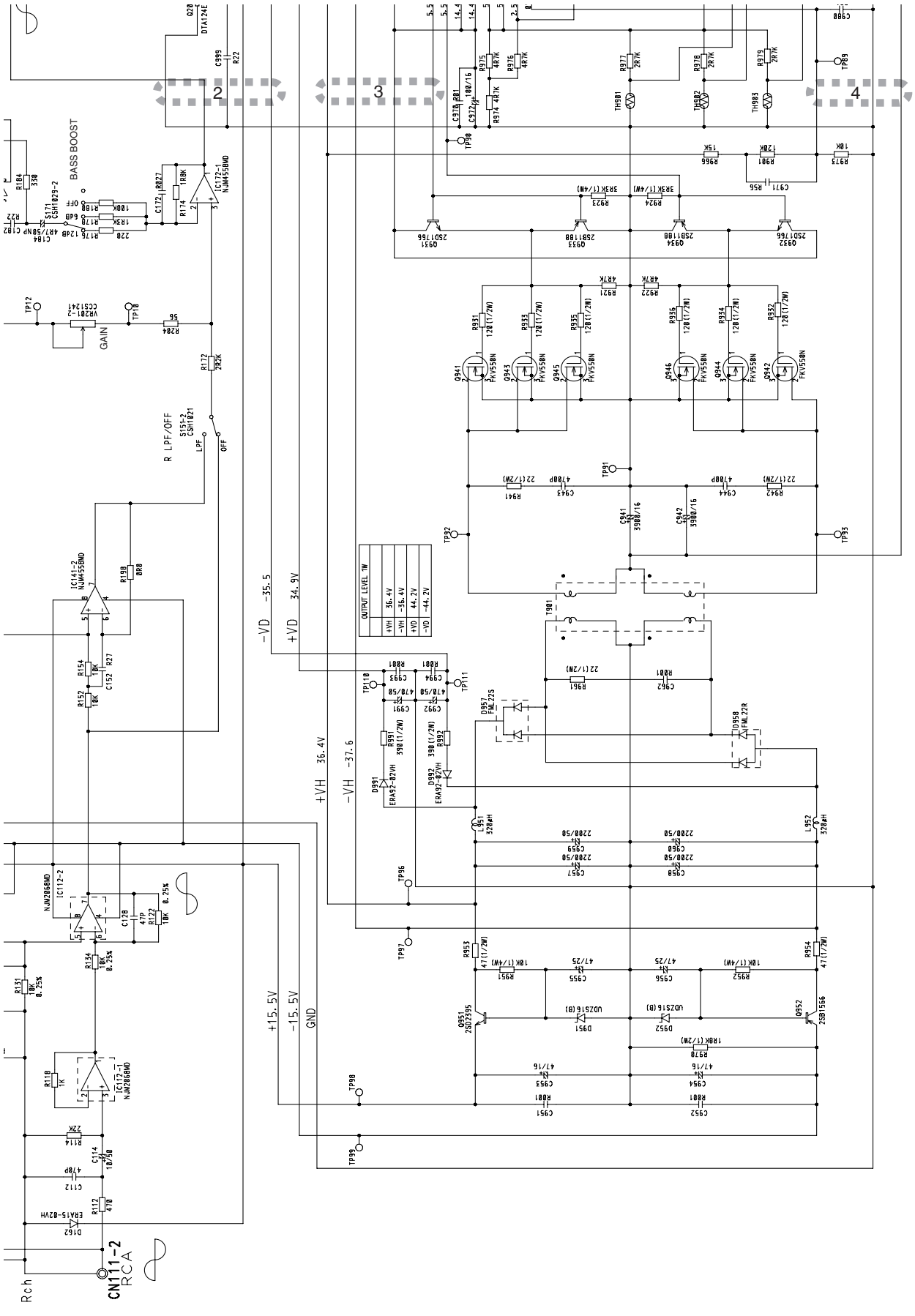


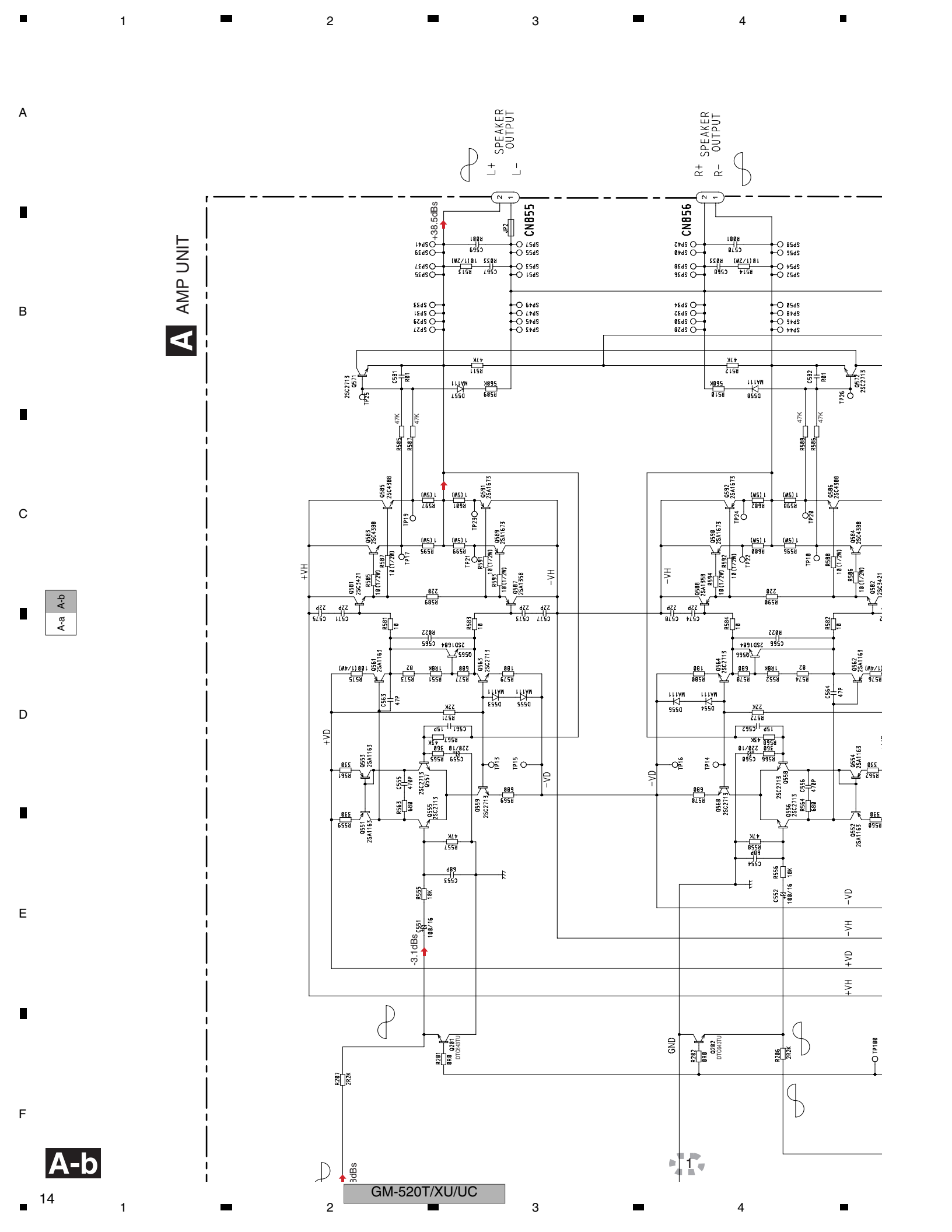
NOTE :

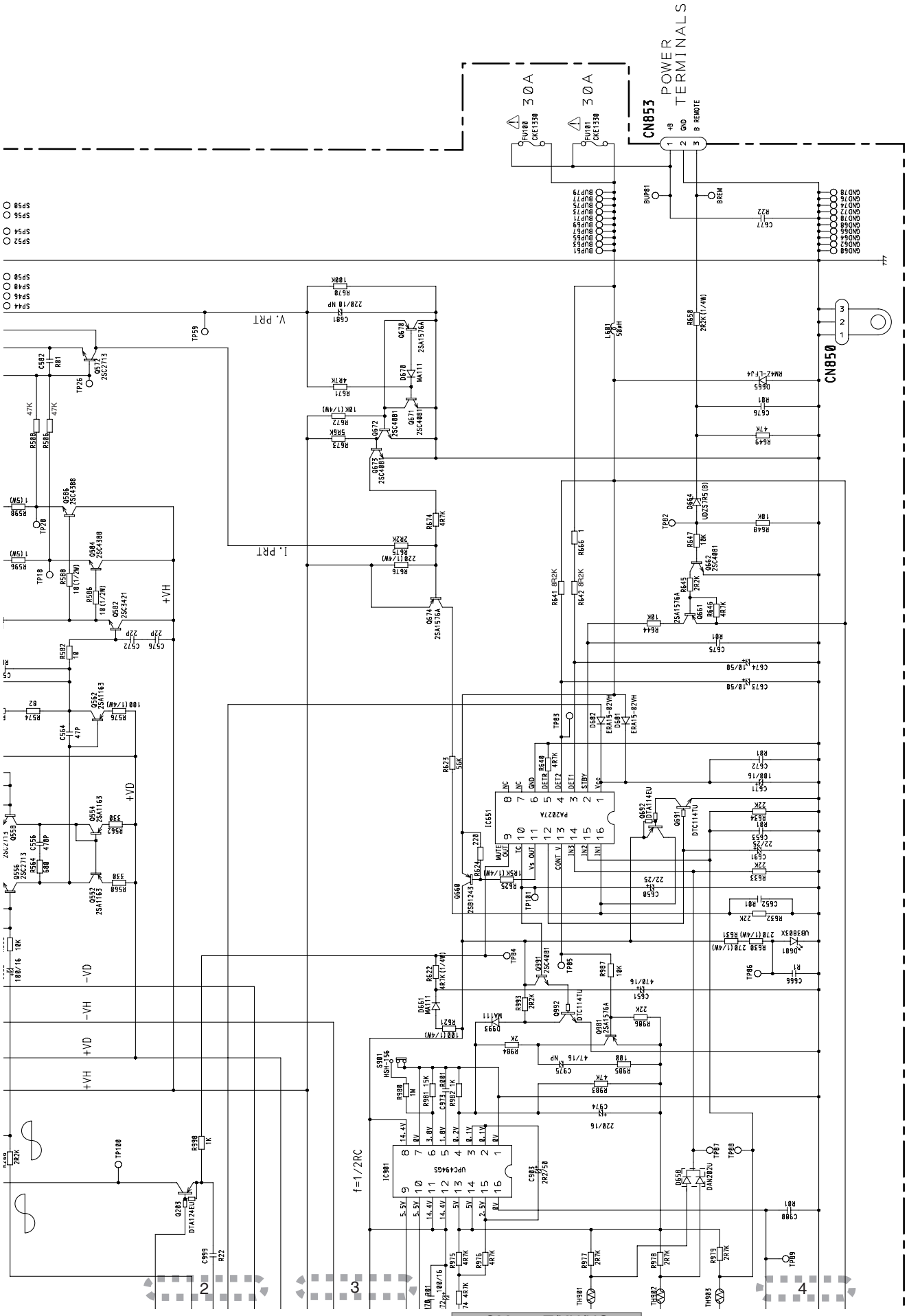
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2 → 2R2
0.022 → R022

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.


BASS BOOST
GAIN
R LPF/OFF
LPF
OFF
OUTPUT LEVEL 1W
+VH 36.4V
-VH -36.4V
+VD 44.2V
-VD -44.2V
-VD -35.5
+VD 34.9V
+VH 36.4V
-VH -37.6
+15.5V
-15.5V
GND
Rch
CN111-2
RCA
A-b
A-a
GM-520T/XU/UC
13

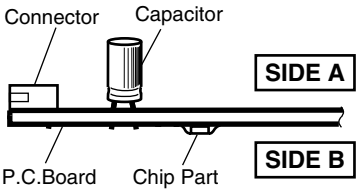

A AMP UNIT
L+ SPEAKER OUTPUT L-
R+ SPEAKER OUTPUT R-
CN855
CN856
+38.5dBs
-3.1dBs
3dBs
+VH
-VH
+VD
-VD
GND
A-b
A-a
A-b
GM-520T/XU/UC
14


CN853
POWER TERMINALS
CN850
30A
30A
V. PRT
I. PRT
+VH
+VD
-VD
-VH
f=1/2RC
A-b
A-a
GM-520T/XU/UC

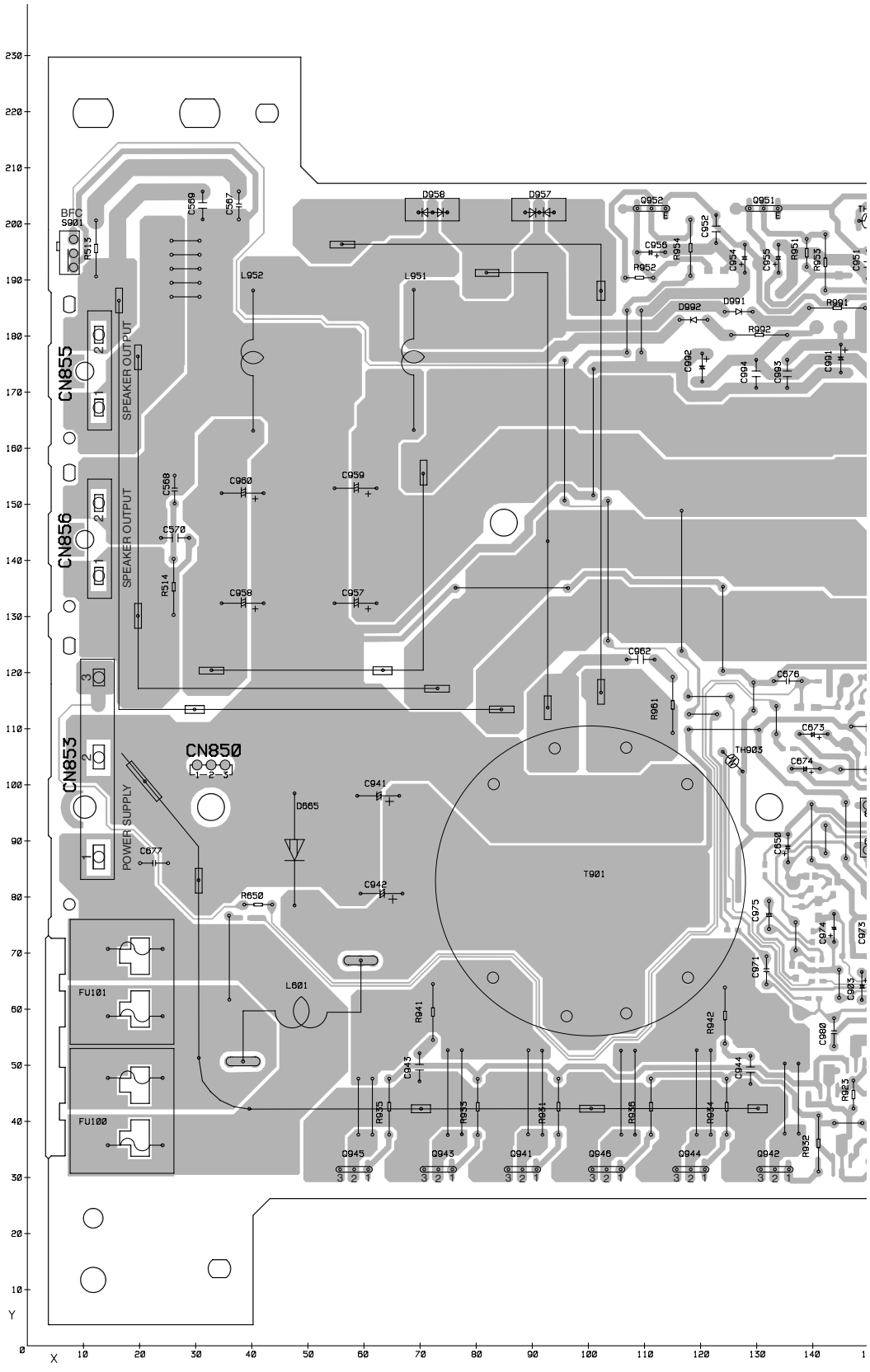
4. PCB CONNECTION DIAGRAM
4.1 AMP UNIT

NOTE FOR PCB DIAGRAMS

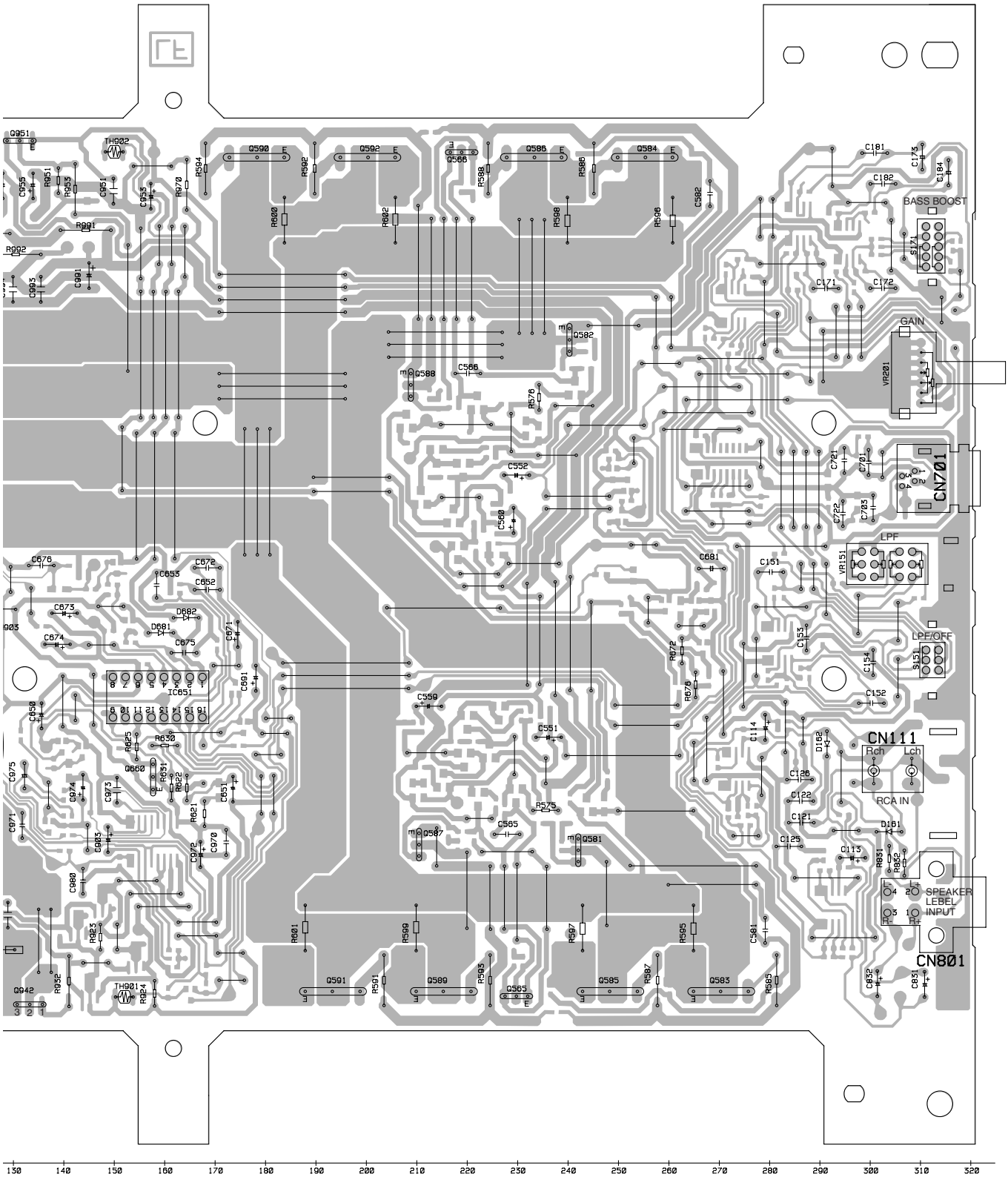
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



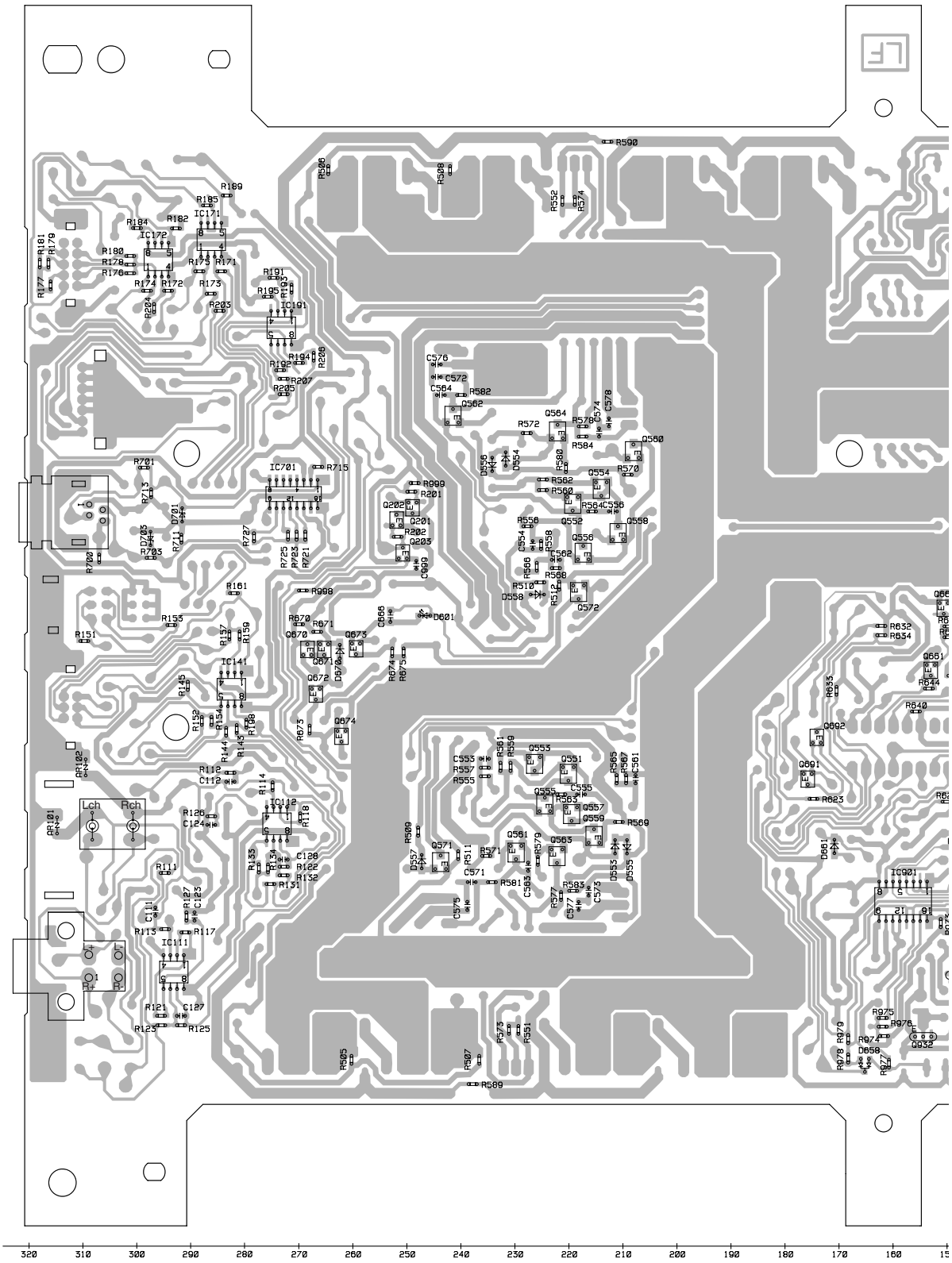
A AMP UNIT



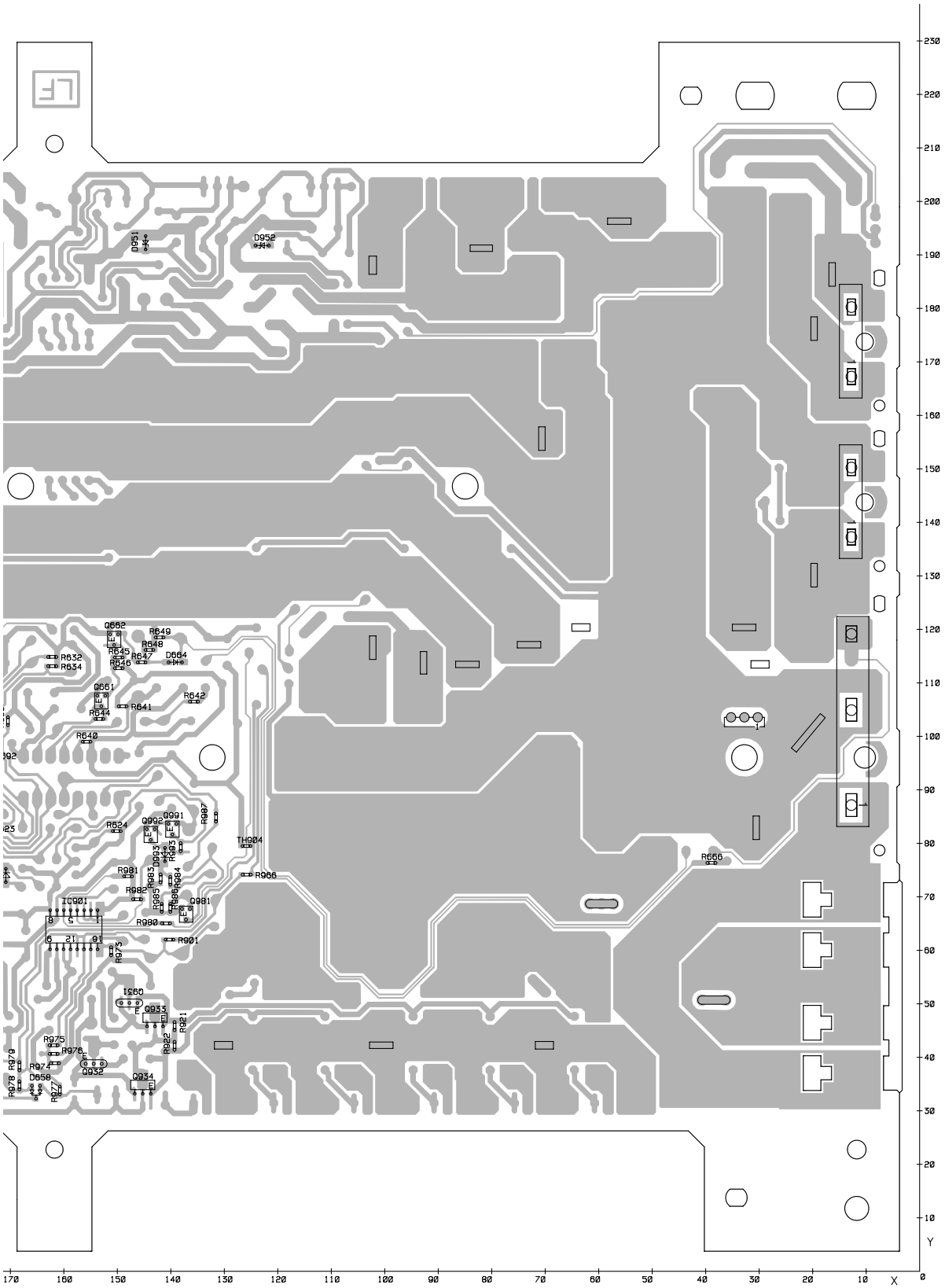
SIDE A


BASS BOOST
GAIN
LPF
LPF/OFF
CN111
Rch
Lch
RCA IN
SPEAKER
LEBEL
INPUT
CN801
CN701
IC651
TH002
TH001
VR201
VR151
S171
S151
Q951
Q590
Q592
Q566
Q586
Q584
Q582
Q588
Q580
Q581
Q591
Q589
Q585
Q583
Q942
Q660
C181
C182
C173
C184
C171
C172
C566
C552
C560
C721
C701
C704
C722
C703
C681
C151
C153
C154
C152
C559
C551
C114
C126
C122
C121
C125
C113
C565
C575
C676
C672
C653
C652
C673
C674
C675
C671
C691
C650
C975
C974
C973
C971
C972
C970
C980
C903
C991
C993
C901
C651
C852
C851
D682
D681
D162
D161
R504
R592
R588
R586
R582
R600
R602
R598
R596
R970
R951
R953
R955
R991
R992
R576
R672
R679
R625
R650
R622
R621
R575
R831
R832
R601
R599
R597
R595
R581
R923
R932
R924
R591
R593
R587
R585
R852
R851

A AMP UNIT


Lch
Rch
320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170 160

SIDE B



A B C D E F

5. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

  Chip Resistor

  RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Meaning of the figures and others in the parentheses in the parts list.*

  Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

  IC 301 (A, 91, 111) IC NJM2068V

A

Unit Number : CWH1287

Unit Name : Amp Unit

MISCELLANEOUS

Circuit Symbol and No.		Part No.
IC 111	(B,293,51) IC	NJM2068MD
IC 112	(B,274,78) IC	NJM2068MD
IC 141	(B,283,103) IC	NJM4558MD
IC 171	(B,286,186) IC	NJM4558MD
IC 172	(B,296,183) IC	NJM4558MD
IC 651	(A,168,96) IC	PA2027A
IC 901	(B,158,64) IC	UPC494GS
Q 201	(B,249,137) Transistor	DTC643TU
Q 202	(B,252,134) Transistor	DTC643TU
Q 203	(B,251,128) Transistor	DTA124EU
Q 551	(B,220,87) Transistor	2SA1163
Q 552	(B,219,137) Transistor	2SA1163
Q 553	(B,226,89) Transistor	2SA1163
Q 554	(B,214,140) Transistor	2SA1163
Q 555	(B,224,82) Transistor	2SC2713
Q 556	(B,217,128) Transistor	2SC2713
Q 557	(B,220,80) Transistor	2SC2713
Q 558	(B,211,132) Transistor	2SC2713
Q 559	(B,215,76) Transistor	2SC2713
Q 560	(B,208,147) Transistor	2SC2713
Q 561	(B,230,73) Transistor	2SA1163
Q 562	(B,241,154) Transistor	2SA1163
Q 563	(B,222,72) Transistor	2SC2713
Q 564	(B,222,151) Transistor	2SC2713
Q 565	(A,230,33) Transistor	2SD1684
Q 566	(A,219,200) Transistor	2SD1684
Q 571	(B,244,71) Transistor	2SC2713
Q 572	(B,218,121) Transistor	2SC2713
Q 581	(A,242,62) Transistor	2SC3421
Q 582	(A,240,163) Transistor	2SC3421
Q 583	(A,276,34) Transistor	2SC4388
Q 584	(A,250,199) Transistor	2SC4388
Q 585	(A,254,34) Transistor	2SC4388
Q 586	(A,228,199) Transistor	2SC4388
Q 587	(A,210,63) Transistor	2SA1358
Q 588	(A,209,154) Transistor	2SA1358
Q 589	(A,221,34) Transistor	2SA1673
Q 590	(A,173,199) Transistor	2SA1673
Q 591	(A,199,34) Transistor	2SA1673
Q 592	(A,195,199) Transistor	2SA1673
Q 660	(A,158,74) Transistor	2SB1243
Q 661	(B,153,107) Transistor	2SA1576A
Q 662	(B,151,118) Transistor	2SC4081
Q 670	(B,268,110) Transistor	2SA1576A
Q 671	(B,265,110) Transistor	2SC4081
Q 672	(B,267,102) Transistor	2SC4081
Q 673	(B,259,111) Transistor	2SC4081
Q 674	(B,262,94) Transistor	2SA1576A
Q 691	(B,176,86) Transistor	DTC114TU
Q 692	(B,174,94) Transistor	DTA114EU
Q 931	(B,148,52) Transistor	2SD1766
Q 932	(B,154,41) Transistor	2SD1766
Q 933	(B,143,47) Transistor	2SB1188
Q 934	(B,145,35) Transistor	2SB1188
Q 941	(A,91,31) Transistor	FKV550N
Q 942	(A,136,31) Transistor	FKV550N
Q 943	(A,76,31) Transistor	FKV550N
Q 944	(A,121,31) Transistor	FKV550N
Q 945	(A,61,31) Transistor	FKV550N
Q 946	(A,106,31) Transistor	FKV550N
Q 951	(A,129,203) Transistor	2SD2395
Q 952	(A,109,203) Transistor	2SB1566
Q 981	(B,137,67) Transistor	2SA1576A
Q 991	(B,140,83) Transistor	2SC4081
Q 992	(B,144,82) Transistor	DTC114TU
D 161	(A,306,66) Diode	ERA15-02VH
D 162	(A,291,86) Diode	ERA15-02VH
D 553	(B,211,74) Diode	MA111
D 554	(B,232,146) Diode	MA111
D 555	(B,209,74) Diode	MA111
D 556	(B,234,145) Diode	MA111
D 557	(B,247,71) Diode	MA111
D 558	(B,226,121) Diode	MA111
D 601	(B,247,117) LED	FR1112H

Circuit Symbol and No.		Part No.
D 658	(B,165,33) Diode	DAN202U
D 661	(B,171,74) Diode	MA111
D 664	(B,139,114) Diode	UDZS7R5(B)
D 665	(A,48,99) Diode	RM4Z-LFJ4
D 670	(B,262,110) Diode	MA111
D 681	(A,157,105) Diode	ERA15-02VH
D 682	(A,162,108) Diode	ERA15-02VH
D 951	(B,145,192) Diode	UDZS16(B)
D 952	(B,123,192) Diode	UDZS16(B)
D 957	(A,89,202) Diode	FML22S
D 958	(A,70,202) Diode	FML22R
D 991	(A,124,184) Diode	ERA92-02VH
D 992	(A,121,183) Diode	ERA92-02VH
D 993	(B,141,78) Diode	MA111
L 601	(A,59,69) Choke Coil 50µH	CTH1323
L 951	(A,69,163) Choke Coil 320µH	CTH1326
L 952	(A,40,163) Choke Coil 320µH	CTH1326
T 901	(A,100,83) Transformer	CTT1122
TH901	(A,150,33) Thermistor	CCX1065
TH902	(A,148,201) Thermistor	CCX1065
TH903	(A,128,102) Thermistor	CCX1064
S 151	(A,314,98) Switch(LPF/OFF)	CSH1021
S 171	(A,314,178) Switch(BASS BOOST)	CSH1029
S 901	(A,8,197) Switch(BFC)	HSH-156
VR201	(A,310,151) Volume 10kΩ(A))(GAIN)	CCS1241
⚠FU100	(A,19,42) Fuse 30A	CEK1330
⚠FU101	(A,19,65) Fuse 30A	CEK1330
AR101	(B,315,78) Surge Protector	CSA30-201N
AR102	(B,309,89) Surge Protector	CSA30-201N

RESISTORS

R 111	(B,295,69)	RS1/16S471J
R 112	(B,283,88)	RS1/16S471J
R 113	(B,295,59)	RS1/16S223J
R 114	(B,275,85)	RS1/16S223J
R 117	(B,291,58)	RS1/16S102J
R 118	(B,270,79)	RS1/16S102J
R 121	(B,296,43) 10kΩ	CCN1152
R 122	(B,273,70) 10kΩ	CCN1152
R 123	(B,295,41) 10kΩ	CCN1152
R 125	(B,292,41) 10kΩ	CCN1152
R 126	(B,286,80) 10kΩ	CCN1152
R 127	(B,291,61) 10kΩ	CCN1152
R 131	(B,275,67) 10kΩ	CCN1152
R 134	(B,276,70) 10kΩ	CCN1152
R 152	(B,288,97)	RS1/16S103J
R 154	(B,286,97)	RS1/16S103J
R 157	(B,283,113)	RS1/16S103J
R 159	(B,281,113)	RS1/16S103J
R 171	(B,284,181)	RS1/16S222J
R 172	(B,294,177)	RS1/16S222J
R 173	(B,286,176)	RS1/16S101J
R 174	(B,298,177)	RS1/16S182J
R 175	(B,288,181)	RS1/16S182J
R 176	(B,301,180)	RS1/16S221J
R 177	(B,316,178)	RS1/16S121J
R 178	(B,301,182)	RS1/16S132J
R 179	(B,316,182)	RS1/16S122J
R 180	(B,301,183)	RS1/16S104J
R 181	(B,318,182)	RS1/16S104J
R 182	(B,293,188)	RS1/16S273J
R 184	(B,300,189)	RS1/16S331J
R 185	(B,287,193)	RS1/16S331J
R 189	(B,283,195)	RS1/16S273J
R 198	(B,280,97)	RS1/16S0R0J
R 201	(B,249,140)	RS1/16S0R0J
R 202	(B,252,131)	RS1/16S0R0J
R 203	(B,285,173)	RS1/16S560J
R 204	(B,297,174)	RS1/16S560J
R 206	(B,267,165)	RS1/16S222J
R 207	(B,273,161)	RS1/16S222J
R 505	(B,260,35)	RS1/16S473J
R 506	(B,265,199)	RS1/16S473J
R 507	(B,237,35)	RS1/16S473J
R 508	(B,242,199)	RS1/16S473J
R 509	(B,248,77)	RS1/16S564J
R 510	(B,225,123)	RS1/16S564J
R 511	(B,241,72)	RS1/16S473J
R 512	(B,222,122)	RS1/16S473J
R 513	(A,12,201)	RD1/2PM100J
R 514	(A,26,140)	RD1/2PM100J
R 551	(B,229,40)	RS1/16S182J
R 552	(B,221,194)	RS1/16S182J
R 555	(B,236,87)	RS1/16S103J
R 556	(B,228,133)	RS1/16S103J
R 557	(B,236,89)	RS1/16S473J
R 558	(B,225,130)	RS1/16S473J
R 559	(B,231,89)	RS1/16S331J
R 560	(B,225,140)	RS1/16S331J
R 561	(B,233,89)	RS1/16S331J
R 562	(B,225,142)	RS1/16S331J
R 563	(B,221,84)	RS1/16S681J
R 564	(B,216,136)	RS1/16S681J
R 565	(B,211,86)	RS1/16S361J
R 566	(B,226,126)	RS1/16S361J
R 567	(B,209,86)	RS1/16S433J
R 568	(B,222,126)	RS1/16S433J
R 569	(B,211,79)	RS1/16S681J
R 570	(B,209,143)	RS1/16S681J
R 571	(B,235,72)	RS1/16S223J
R 572	(B,228,151)	RS1/16S223J
R 573	(B,231,40)	RS1/16S390J
R 574	(B,219,194)	RS1/16S390J
R 575	(A,233,70)	RD1/4PU101J
R 576	(A,234,154)	RD1/4PU101J
R 577	(B,221,65)	RS1/16S681J
R 578	(B,217,152)	RS1/16S681J
R 579	(B,226,71)	RS1/16S181J
R 580	(B,221,144)	RS1/16S181J
R 581	(B,234,67)	RS1/16S100J
R 582	(B,240,158)	RS1/16S100J
R 583	(B,219,66)	RS1/16S100J
R 584	(B,217,150)	RS1/16S100J
R 585	(A,281,31)	RD1/2PM100J
R 586	(A,245,202)	RD1/2PM100J
R 587	(A,258,31)	RD1/2PM100J
R 588	(A,224,202)	RD1/2PM100J
R 589	(B,238,30)	RS1/16S221J
R 590	(B,213,205)	RS1/16S221J

Circuit Symbol and No.		Part No.
R 591	(A,204,31)	RD1/2PM100J
R 592	(A,190,202)	RD1/2PM100J
R 593	(A,225,31)	RD1/2PM100J
R 594	(A,168,202)	RD1/2PM100J
R 595	(A,265,51) 0.1Ω	CCN1155
R 596	(A,261,192) 0.1Ω	CCN1155
R 597	(A,243,51) 0.1Ω	CCN1155
R 598	(A,240,192) 0.1Ω	CCN1155
R 599	(A,210,42) 0.1Ω	CCN1155
R 600	(A,184,183) 0.1Ω	CCN1155
R 601	(A,188,42) 0.1Ω	CCN1155
R 602	(A,206,183) 0.1Ω	CCN1155
R 621	(A,168,67)	RD1/4PU101J
R 622	(A,164,72)	RD1/4PU472J
R 623	(B,175,83)	RS1/16S563J
R 624	(B,150,82)	RS1/16S221J
R 625	(A,154,85)	RD1/4PU152J
R 630	(A,163,83)	RD1/4PU271J
R 631	(A,161,77)	RD1/4PU471J
R 632	(B,162,115)	RS1/16S223J
R 633	(B,170,103)	RS1/16S223J
R 634	(B,162,113)	RS1/16S223J
R 640	(B,156,99)	RS1/16S472J
R 641	(B,149,106)	RS1/16S822J
R 642	(B,136,107)	RS1/16S822J
R 644	(B,153,103)	RS1/16S103J
R 645	(B,150,115)	RS1/16S222J
R 646	(B,150,113)	RS1/16S472J
R 647	(B,145,114)	RS1/16S103J
R 648	(B,144,116)	RS1/16S103J
R 649	(B,142,119)	RS1/16S473J
R 650	(A,44,79)	RD1/4PU222J
R 666	(B,39,76)	RS1/16S1R0J
R 670	(B,270,115)	RS1/16S104J
R 671	(B,267,114)	RS1/16S472J
R 672	(A,263,104)	RD1/4PU103J
R 673	(B,268,96)	RS1/16S562J
R 674	(B,253,110)	RS1/16S472J
R 675	(B,251,110)	RS1/16S222J
R 676	(A,265,97)	RD1/4PU221J
R 831	(A,304,63)	RD1/4PU683J
R 832	(A,307,62)	RD1/4PU683J
R 901	(B,140,62)	RS1/16S124J
R 921	(B,139,46)	RS1/16S472J
R 922	(B,139,42)	RS1/16S472J
R 923	(A,147,47)	RD1/4PU332J
R 924	(A,158,31)	RD1/4PU332J
R 931	(A,95,38)	RD1/2PM121J
R 932	(A,141,31)	RD1/2PM121J
R 933	(A,80,38)	RD1/2PM121J
R 934	(A,125,38)	RD1/2PM121J
R 935	(A,65,38)	RD1/2PM121J
R 936	(A,111,38)	RD1/2PM121J
R 941	(A,72,65)	RD1/2PM220J
R 942	(A,124,54)	RD1/2PM220J
R 951	(A,139,197)	RD1/4PU103J
R 952	(A,112,190)	RD1/4PU103J
R 953	(A,142,198)	RD1/2PM470J
R 954	(A,118,201)	RD1/2PM470J
R 961	(A,115,109)	RD1/2PM220J

Circuit Symbol and No.		Part No.
R 966	(B,126,74)	RS1/16S153J
R 970	(A,164,199)	RD1/2PM182J
R 973	(B,151,60)	RS1/16S103J
R 974	(B,162,39)	RS1/16S472J
R 975	(B,162,42)	RS1/16S472J
R 976	(B,162,41)	RS1/16S472J
R 977	(B,161,34)	RS1/16S272J
R 978	(B,168,35)	RS1/16S272J
R 979	(B,168,38)	RS1/16S272J
R 980	(B,141,65)	RS1/16S105J
R 981	(B,148,74)	RS1/16S153J
R 982	(B,146,70)	RS1/16S102J
R 983	(B,142,73)	RS1/16S473J
R 984	(B,140,73)	RS1/16S202J
R 985	(B,142,68)	RS1/16S101J
R 986	(B,140,68)	RS1/16S223J
R 987	(B,132,85)	RS1/16S103J
R 991	(A,139,185)	RD1/2PM391J
R 992	(A,125,180)	RD1/2PM391J
R 993	(B,138,79)	RS1/16S222J
R 998	(B,269,121)	RS1/16S102J

CAPACITORS

C 111	(B,297,62)	CKSRYB471K50
C 112	(B,283,86)	CKSRYB471K50
C 113	(A,299,61)	CEAT100M50
C 114	(A,279,89)	CEAT100M50
C 121	(A,284,68)	CFTNA223J50
C 122	(A,284,72)	CFTNA223J50
C 123	(B,289,61)	CCSRCH470J50
C 124	(B,286,78)	CCSRCH470J50
C 125	(A,286,63)	CFTNA103J50
C 126	(A,283,76)	CFTNA103J50
C 127	(B,292,43)	CCSRCH470J50
C 128	(B,273,72)	CCSRCH470J50
C 151	(A,283,117)	CFTNA274J50
C 152	(A,303,91)	CFTNA274J50
C 153	(A,287,102)	CFTNA154J50
C 154	(A,301,97)	CFTNA154J50
C 171	(A,289,173)	CFTNA273J50
C 172	(A,300,174)	CFTNA273J50
C 173	(A,310,202)	CEANP4R7M50
C 181	(A,298,200)	CFTNA224J50
C 182	(A,300,194)	CFTNA224J50
C 184	(A,315,199)	CEANP4R7M50
C 551	(A,239,84)	CEAT101M16
C 552	(A,232,136)	CEAT101M16
C 553	(B,236,90)	CCSRCH680J50
C 554	(B,227,130)	CCSRCH680J50
C 555	(B,218,84)	CKSRYB471K50
C 556	(B,212,136)	CKSRYB471K50
C 559	(A,210,91)	CEAT221M10
C 560	(A,229,125)	CEAT221M10
C 561	(B,208,86)	CCSRCH150J50
C 562	(B,222,127)	CCSRCH150J50
C 563	(B,228,70)	CCSRCH470J50
C 564	(B,244,158)	CCSRCH470J50
C 565	(A,230,65)	CFTNA223J50
C 566	(A,218,157)	CFTNA223J50

Circuit Symbol and No.		Part No.
C 567	(A,38,201)	CFTNA333J50
C 568	(A,26,155)	CFTNA333J50
C 569	(A,31,203)	CQHA102J2A
C 570	(A,26,144)	CQHA102J2A
C 571	(B,238,67)	CCSRCH220J50
C 572	(B,244,161)	CCSRCH220J50
C 573	(B,216,66)	CCSRCH220J50
C 574	(B,214,151)	CCSRCH220J50
C 575	(B,239,63)	CCSRCH220J50
C 576	(B,244,163)	CCSRCH220J50
C 577	(B,218,63)	CCSRCH220J50
C 578	(B,213,153)	CCSRCH220J50
C 581	(A,279,44)	CFTNA103J50
C 582	(A,268,195)	CFTNA103J50
C 650	(A,136,86)	CEAT220M25
C 651	(A,174,77)	CEAT471M16
C 652	(A,171,114)	CFTNA103J50
C 653	(A,158,117)	CFTNA103J50
C 671	(A,175,102)	CEAT101M16
C 672	(A,171,118)	CFTNA103J50
C 673	(A,143,109)	CEAT100M50
C 674	(A,141,103)	CEAT100M50
C 675	(A,166,101)	CFTNA103J50
C 676	(A,133,119)	CFTNA103J50
C 677	(A,25,86)	CFTNA224J50
C 681	(A,271,118)	CEANP221M10
C 691	(A,178,94)	CEAT220M25
C 831	(A,311,38)	CEAT100M50
C 832	(A,301,38)	CEAT100M50
C 903	(A,149,67)	CEAT2R2M50
C 941	(A,66,98) 3900µF/16V	CCH1644(P35)
C 942	(A,67,81) 3900µF/16V	CCH1644(P35)
C 943	(A,70,50)	CQHA472J2A
C 944	(A,129,49)	CQHA472J2A
C 951	(A,150,193)	CQHA102J2A
C 952	(A,123,199)	CQHA102J2A
C 953	(A,157,194)	CEAT470M16
C 954	(A,128,191)	CEAT470M16
C 955	(A,134,191)	CEAT470M25
C 956	(A,114,195)	CEAT470M25
C 957	(A,62,132) 2200µF/50V	CCH1647(P35)
C 958	(A,42,132) 2200µF/50V	CCH1647(P35)
C 959	(A,62,153) 2200µF/50V	CCH1647(P35)
C 960	(A,42,152) 2200µF/50V	CCH1647(P35)
C 962	(A,109,122)	CQHA102J2A
C 970	(A,172,61)	CFTNA103J50
C 971	(A,132,64)	CFTNA564J50
C 972	(A,167,64)	CEAT101M16
C 973	(A,151,74)	CQHA102J2A
C 974	(A,144,72)	CEAT221M16
C 975	(A,132,74)	CEANP470M16
C 980	(A,144,53)	CFTNA103J50
C 991	(A,145,179)	CEAT471M50(P45)
C 992	(A,120,177)	CEAT471M50(P45)
C 993	(A,135,173)	CQHA102J2A
C 994	(A,130,173)	CQHA102J2A
C 999	(B,248,126)	CKSRYB224K16

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● **Removing the Case (Fig.1)**

1 Remove the six screws and then remove the Case.

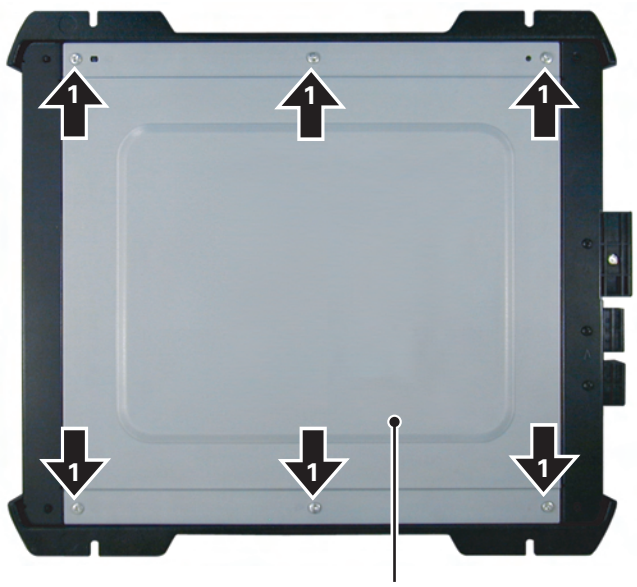


Fig.1

● **Removing the Amp Unit (Fig.2)**

1 Remove the fifteen screws and then remove the Amp Unit.

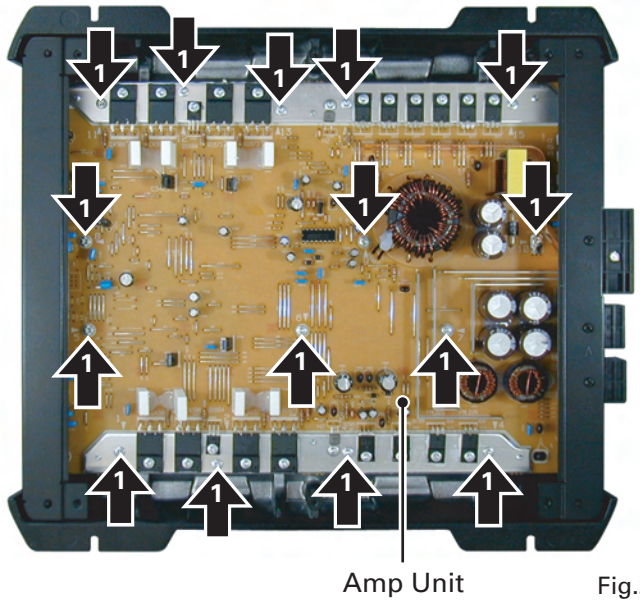
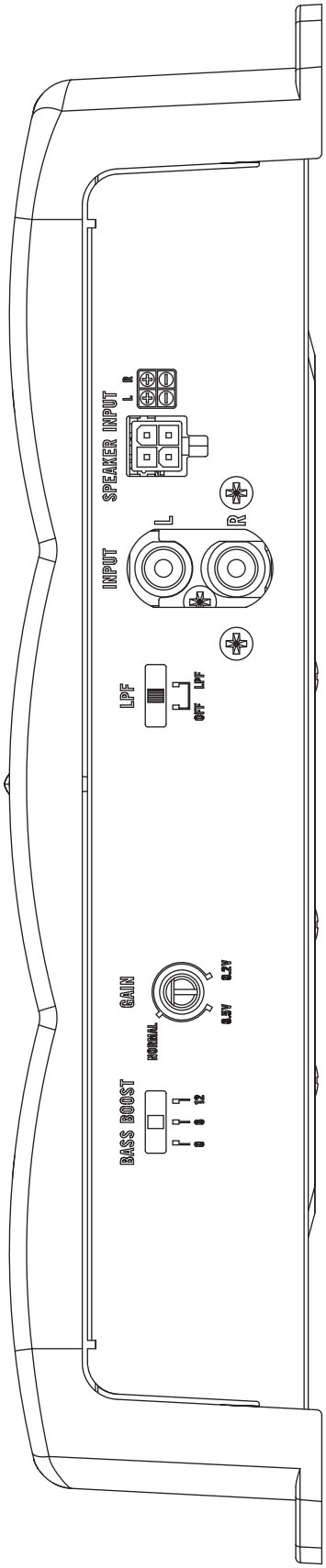
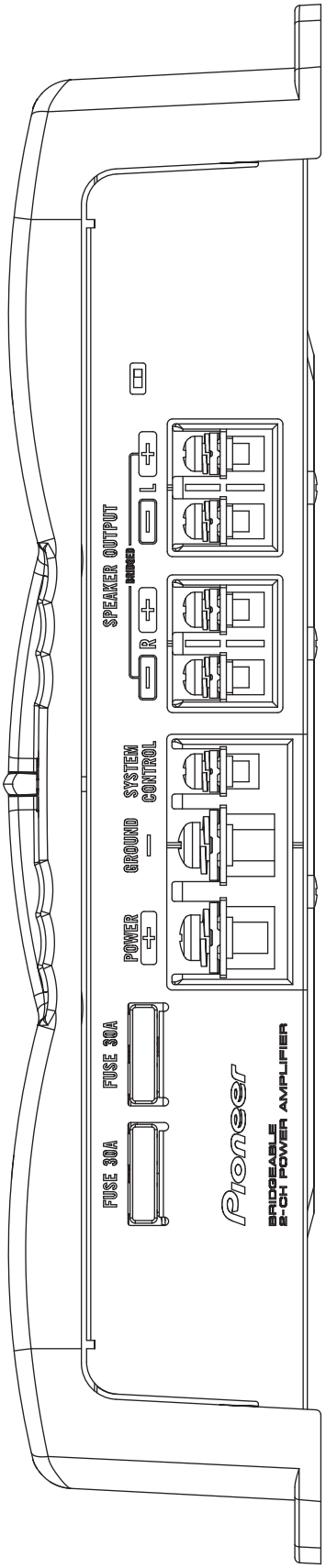


Fig.2

7.1.2 CONNECTOR FUNCTION DESCRIPTION





8. OPERATIONS

Power Indicator

The power indicator lights when the power is switched on.

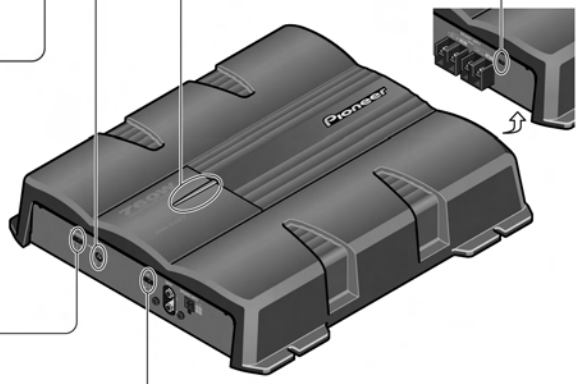
BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an AM broadcast with your car stereo, change the BFC switch using a small standard tip screwdriver.

Gain Control

If the sound level is too low, even when the volume of the car stereo used along with this power amplifier is turned up, turn gain control on the front of the power amplifier clockwise. If the sound distorts when the volume is turned up, turn the gain control counter-clockwise.

- When using with an RCA equipped car stereo (standard output of 500 mV), set to the NORMAL position. When using with an RCA equipped Pioneer car stereo with max. output of 4 V or more, adjust level to match the car stereo output level.
- If you hear too much noise when using the speaker input terminals, turn the gain control counter-clockwise.



Bass Boost Level Control Switch

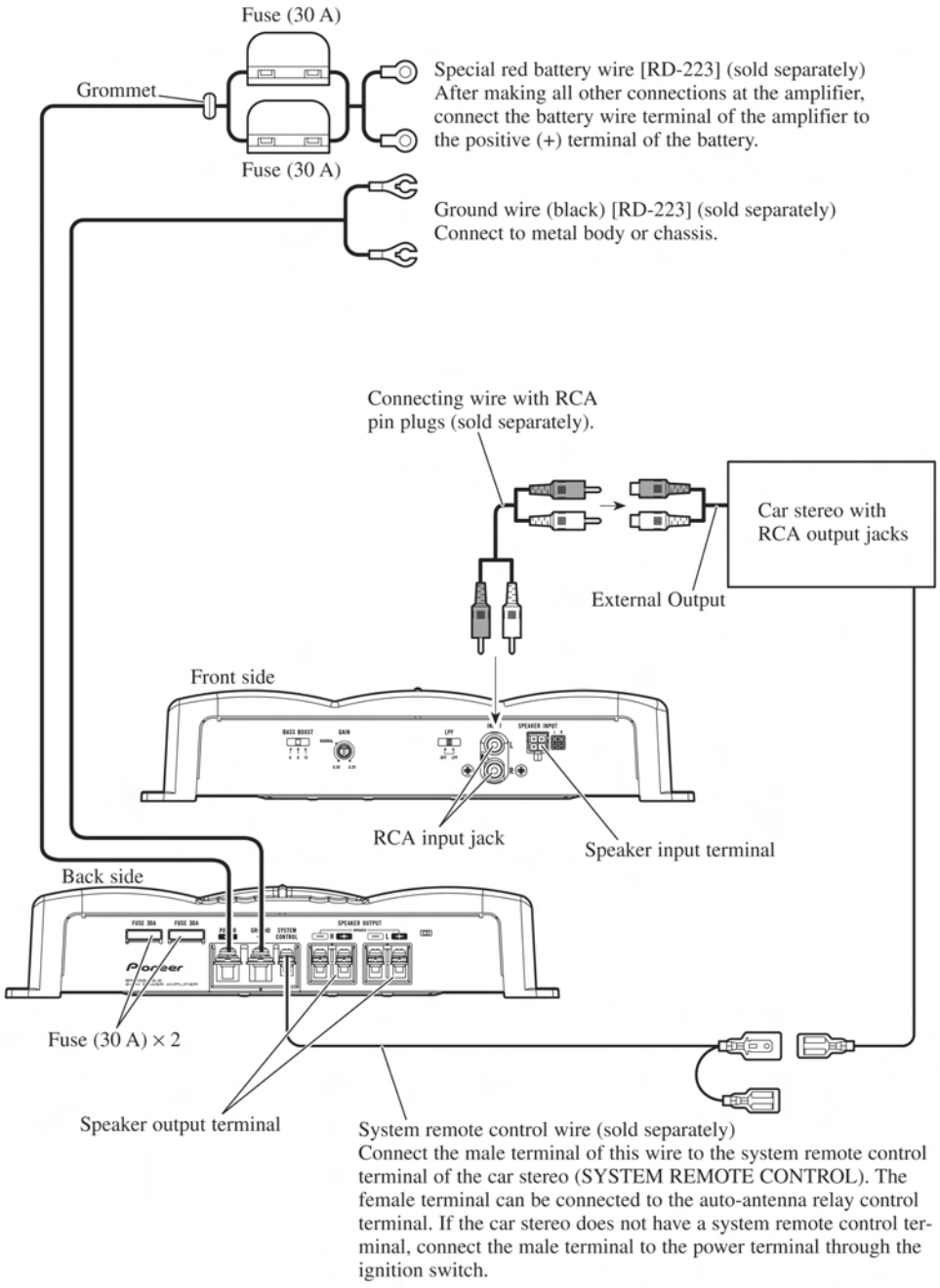
Bass boost level control can boost the level around the frequency selected by the bass boost frequency control switch from 0, 6, and 12 dB.

LPF (Low-Pass Filter) Select Switch

Set the LPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
LPF (right)	Very Low Frequency range	Subwoofer	Connect a subwoofer.
OFF (left)	Full range	Full range	

● CONNECTION DIAGRAM

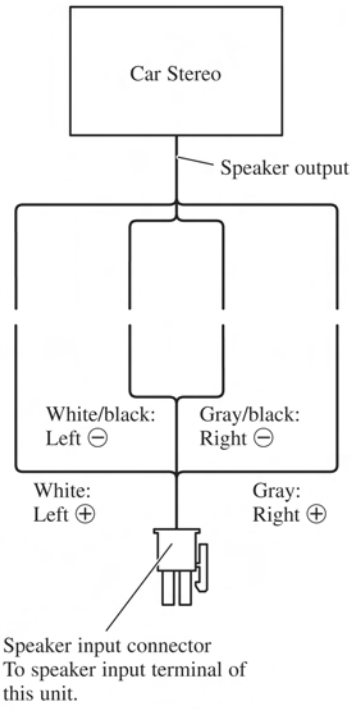

Fuse (30 A)
Grommet
Special red battery wire [RD-223] (sold separately)
After making all other connections at the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
Fuse (30 A)
Ground wire (black) [RD-223] (sold separately)
Connect to metal body or chassis.
Connecting wire with RCA pin plugs (sold separately).
Car stereo with RCA output jacks
External Output
Front side
RCA input jack
Speaker input terminal
Back side
Fuse (30 A) × 2
Speaker output terminal
System remote control wire (sold separately)
Connect the male terminal of this wire to the system remote control terminal of the car stereo (SYSTEM REMOTE CONTROL). The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo does not have a system remote control terminal, connect the male terminal to the power terminal through the ignition switch.

Using the Speaker Input

Connect the car stereo speaker output wires to the amplifier using the supplied speaker input connector.

- Do not connect both the RCA input and the speaker input at the same time.

■ Connections when using the speaker input

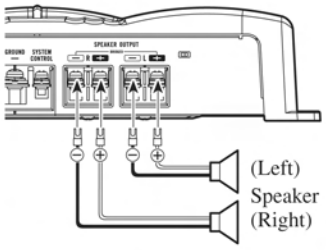


Connecting the Speaker Wires

The speaker output mode can be two-channel (stereo) or one-channel (mono). Connect the speaker leads to suit the mode according to the figures shown below.

- Do not connect both the RCA input and the speaker input at the same time.

Two-channel mode (stereo)



One-channel mode (mono)